

Wyoming Surface Water Quality Standards



**Implementation Policies
for

Antidegradation
Mixing Zones
Turbidity
Use Attainability Analysis**

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ANTIDegradation Implementation Policy

I. Purpose

Section 8 of Quality Standards for Wyoming Surface Waters (Water Quality Division Rules and Regulations, Chapter 1) establishes a regulatory policy concerning antidegradation. That regulation provides...

(a) Water uses in existence on or after November 28, 1975 and the level of water quality necessary to protect those uses shall be maintained and protected. Those surface waters not designated as Class 1, but whose quality is better than the standards contained in these regulations, shall be maintained at that higher quality. However, after full intergovernmental coordination and public participation, the Wyoming Department of Environmental Quality may issue a permit for or allow any project or development which would constitute a new source of pollution, or an increased source of pollution, to these waters as long as the following conditions are met:

- (i) The quality is not lowered below these standards;*
 - (ii) All existing water uses are fully maintained and protected;*
 - (iii) The highest statutory and regulatory requirements for all new and existing point sources and all cost effective and reasonable best management practices for nonpoint sources have been achieved; and*
 - (iv) The lowered water quality is necessary to accommodate important economic or social development in the area in which the waters are located.*
- (b) The administrator may require an applicant to submit additional information, including but not limited to an analysis of alternatives to any proposed discharge and relevant economic information before making a determination under this section.*
- (c) The procedures used to implement this section are described in the "Antidegradation Implementation Policy."*

Antidegradation protection is one of the essential elements of the state water quality standards program and is required under Section 303(d)(4)(B) of the federal Clean Water Act. The purpose of this implementation procedure is to disclose the decision-making and public participation processes that will be employed by the Water Quality Division in order to ensure compliance with the requirements of Section 8.

A secondary purpose of this implementation plan is to ensure federal approval of the State's surface water quality standards. Though the State has the primary authority to establish standards, the U.S. EPA has a responsibility to make a determination of whether such standards will achieve the goals and requirements of the federal Act. To a large extent, approval of the standards relies upon approval of an antidegradation implementation procedure.

II. Concepts

The water quality standards designate the uses which are protected on waters of the state and establish criteria that describe maximum pollutant concentrations and other water quality conditions that are necessary to maintain those uses. Many waters in the state have an existing level of water quality that is better than the criteria established to support designated uses. The antidegradation requirements are designed to maintain water quality at the higher levels unless there are good reasons for lowering the water quality.

The federal regulations (40 CFR 131.12) require state standards programs to address 3 levels or "tiers" of antidegradation protection. "Tier 1" is the basic level of protection which applies to all waters. Waters which are afforded tier 1 protection only are waters not generally considered to be high quality, or are not currently supporting designated uses, or where assimilative capacity does not exist for parameters that would be affected by a proposed activity.

"Tier 2" protections apply to high quality waters. These are waters which have an existing quality that is better than the established use-support criteria and where an assimilative capacity exists for parameters that would be affected by a proposed activity. Under tier 2, a lowering of water quality may be allowed if it is determined that the amount of degradation is insignificant or if the lowered water quality is necessary to accommodate important economic or social development in the area. Under no circumstances, however, may water quality be lowered below the criteria established in the standards or below a level that would impair an existing use.

"Tier 3" protections apply to waters that constitute "outstanding national resource waters" (ONRWs)¹. Tier 3 requires maintenance of existing quality with no consideration of assimilative capacity or economic or social development. In certain circumstances, temporary lowering of water quality is allowable, however the general rule is that no new point sources or increased pollutant loading from existing point sources is allowable.

The antidegradation implementation procedures that follow shall apply to the review of regulated activities involving new or increased discharges of pollution. Regulated activities include individual NPDES effluent discharge permits, NPDES stormwater permits for

¹The Wyoming water quality protection program has no provision for designating waters that have "national" significance, however, waters designated as Class 1 under the surface water standards are considered to be outstanding resources. Though not designated as ONRWs, Class 1 waters are afforded a level of antidegradation protection which is a functional equivalent of EPA's tier 3 concept.

industrial and construction activities and Section 401 water quality certifications. The procedure is organized starting with the highest level of protection applied to Class 1 waters to the basic minimum level applicable to all waters.

III. Class 1 Waters (Outstanding Aquatic Resources)

The qualification requirements for Class 1 waters are listed in Chapter 1, Water Quality Rules and Regulations, Section 4(a). In addition, the general categories of waters (e.g., waters in national parks, etc.) and specific waters designated as Class 1 are listed in Appendix A of Chapter 1.

Class 1 waters are designated by the Environmental Quality Council in rulemaking hearings. Both the Wyoming Administrative Procedures Act and the Department's Continuing Planning Process (CPP) provide for public input during regulatory and planning processes. Any interested person may nominate a water for Class 1 designation through the procedures outlined in those documents.

A. Point Source Discharges.

The Wyoming surface water quality standards prohibit new or increased "end-of-the-pipe", effluent discharges of pollution to Class 1 waters but allow limited discharges associated with stormwater runoff and construction activities. Permits issued by the Department of Environmental Quality (DEQ) for stormwater or construction-related discharges will contain the following safeguards: (1) changes in water quality will be limited to temporary increases in turbidity; (2) turbidity increases will be limited to those allowed in Section 23 of Chapter 1; and (3) necessary controls and monitoring will be required to ensure existing water quality and uses are maintained and protected. Furthermore, the Department will impose whatever controls are necessary on regulated point source discharges to tributaries of Class 1 waters to the extent that the existing quality and uses of the downstream Class 1 segment will be protected and maintained. It is the Department's interpretation that "tributary" means any waters feeding the mainstem and any upstream mainstem segments.

The following procedures and decision-making processes will be used for each of the Water Quality Division's discharge permitting authorizations on Class 1 waters:

1. NPDES, "end-of-the-pipe" permits:

Permits for new or increased effluent discharges to Class 1 waters will not be issued. This prohibition is not intended to include industrial stormwater permits for which effluent limits have been established where there is no reasonable potential for a discharge of the associated effluent limitations.

2. NPDES Stormwater Permits (*Industrial Activities*):

- a. Stormwater permits for industrial activities may be issued with appropriate conditions and monitoring requirements on an individual case-by-case basis on Class 1 waters. An application for an industrial stormwater permit must contain:
 - (1) a list of all pollutants which can reasonably be expected to occur on-site and be exposed to runoff events;
 - (2) a map showing the location of the industrial facility in relation to the Class 1 receiving water and/or tributaries;
 - (3) water quality data that characterizes the existing quality of the receiving Class 1 water and/or its tributaries in relation to the potential on-site pollutants;
 - (4) a stormwater pollution prevention plan that provides:
 - (a) runoff from the industrial site resulting from up to a 100-year storm event will not discharge to a Class 1 water; or
 - (b) runoff which may discharge to a Class 1 water as the result of any storm event will be of equal or better quality than the receiving water; and
 - (5) a monitoring plan designed to ensure compliance with item (4).
- b. Prior to issuing an industrial stormwater permit, the Department will make a determination based upon the information submitted in the application that the potential effects on the Class 1 receiving stream, if any, will be temporary in nature and limited to discharges of clean sediment and turbidity. The Department may also include any additional construction practices, treatment processes, monitoring and reporting requirements or other special conditions as may be necessary to achieve and demonstrate that existing water quality and uses will be maintained.
- c. The Department will conduct a 30-day public notice and comment period prior to the issuance of any industrial stormwater permit on Class 1 waters disclosing its intent to issue a permit for industrial stormwater discharges. Information received as a result of the public notice will be considered by DEQ and may affect the final determination regarding permit approval.
- d. Existing general stormwater permits for industrial activities will remain in effect for the remainder of their terms. The reauthorization of these

permits, however, is not guaranteed and will be subject to the provisions of the revised rule and the implementation policy described above.

3. NPDES Stormwater Permits (*Construction Activities*):

- a. General stormwater permits for construction activities may be issued with appropriate conditions and monitoring requirements on Class 1 waters. An application for a construction stormwater permit must contain a Notice of Intent (NOI) to discharge stormwater prepared according to the provisions of Appendix B of the Wyoming General Stormwater Permit for Construction Activities. The applicant must submit along with the NOI, a detailed pollution prevention plan which includes sufficient controls on all potential sources of pollution. The pollution prevention plan must demonstrate that the only types of pollution that could reasonably be expected to reach a Class 1 water during a runoff event are limited to turbidity and sediment.
- b. Runoff from ancillary, construction-related facilities such as borrow areas, gravel processing areas, asphalt processing plants, concrete mixing, fuel & solvent storage areas, equipment staging and maintenance areas, and any area which may be a source of pollutants other than turbidity and sediment must be controlled so as not to discharge to any Class 1 water. This provision applies to runoff resulting from up to a 100-year storm event.
- c. The Department shall conduct an in-house review of the NOI and pollution control plan prior to approving coverage under the general stormwater permit. The Department may also include any additional construction practices, monitoring and reporting requirements or other special conditions as may be necessary to achieve and demonstrate that existing water quality and uses will be maintained. The DEQ will not normally conduct a public notice and comment period prior to authorizing specific activities under the stormwater general permit. Public comment was solicited prior to the establishment of the general permit and public notice will be provided at each subsequent renewal (at least once every five years). Upon review of any application for a construction stormwater permit, the Department deny authorization under the general permit and require an individual permit. In such instances, a 30-day public notice will be conducted.

4. 401 Water Quality Certifications.

The Department adopted a policy on October 11, 1996 regarding the issuance of 401 certifications for activities on Class 1 waters. This policy was specifically designed to ensure the protection of existing quality and uses of Class 1 waters and serves as the antidegradation implementation procedure for activities subject to 401 certification on Class 1 waters.

- a. The following classes of construction activities are examples of what may be authorized on Class 1 waters:
 - (1) Habitat Restoration and Enhancement;
 - (2) Repair and Maintenance of Existing Structures;
 - (3) Road Construction and Maintenance;
 - (4) Utility Construction and Maintenance;
 - (5) Streambank Stabilization and Flood Control;
 - (6) Minor Recreational Facilities (boat docks, fishing piers, hiking trails etc.);
 - (7) Environmental Cleanup Activities; and
 - (8) Miscellaneous Development on Isolated Wetlands
- b. Pursuant to the regulations, Chapter 1, Section 7, Certification must be denied on Class 1 waters for the following types of activities if the construction or operation of any new facilities will involve a point source effluent discharge or if the expansion of any existing facility will result in an increase of pollution from an existing discharge. Examples of facilities and activities that commonly involve discharges include wastewater treatment plants, power plants, food processing facilities, gravel processing operations, mining, oil production and refining, fish hatcheries, aquaculture, feedlots etc.
- c. Construction activities can be certified by DEQ if they are designed to meet the following general and activity-specific requirements:
 - (1) Any resultant degradation shall be temporary and all potential negative effects cease at the end of the construction period;
 - (2) Potential contaminants are limited to turbidity and sediment. Increases in downstream turbidity are limited to 10 NTUs above the upstream condition at all times on streams that support fisheries or drinking water supplies. Sediment cannot be discharged in amounts that will adversely affect beneficial uses as described in Chapter 1, Section 15;
 - (3) Stream channel integrity and habitat is preserved and maintained. Written concurrence from the Wyoming Game & Fish Dept. that aquatic habitat will not be degraded will be solicited;

- (4) All existing uses are fully protected and maintained;
 - (5) Existing ambient conditions i.e. dissolved oxygen, pH or temperature are not degraded; and
 - (6) All construction activities must be designed and operated in such a manner that water from dewatering activities, hydrostatic testing of pipelines, gravel washing etc. so as not to allow a surface discharge to a Class 1 water.
- d. 401 Certification shall be denied on Class 1 waters if any of the following applies:
- (1) The project results in degradation of water chemistry, loss of aquatic habitat or a reduction in beneficial use;
 - (2) The application does not contain nor can the certification be conditioned to provide reasonable assurance that turbidity can be controlled within the 10 NTU limit. Sediment will be discharged in amounts that settle to form sludge, bank or bottom deposits;
 - (3) Project may result in channel instability or significant loss of aquatic habitat. Written concurrence from the Game & Fish Dept. is not obtained;
 - (4) Project may result in a loss or reduction of beneficial uses;
 - (5) Existing ambient conditions will be degraded by the activity; or
 - (6) Any surface discharge of process water to a Class 1 water will occur.
- e. In addition to the general requirements above, the following measures apply on an activity-specific basis on Class 1 waters:
- (1) Habitat Improvement Activities:
 - (a) All projects must be supported by the Wyoming Game & Fish Department;
 - (b) Habitat improvement projects should not be designed to trade one beneficial use for another but all uses must be fully maintained, e.g. existing wetlands should not be excavated or inundated to create deep water areas for fish, or stream segments that serve as nursery areas or food sources should not be converted to holding areas for adult fish;

- (c) Special consideration can be given for projects that are part of an approved watershed restoration plan or wetland conservation plan;
- (d) The department must use discretion and professional judgement in determining whether beneficial uses will be impaired in light of the overall project purposes and desired effects.

(2) Repair/Maintenance Activities:

The repair, rehabilitation or replacement of currently serviceable structures provided that the proposed work does not deviate from the original plans, purpose, or use of the structure is acceptable if the general requirements for certification on Class 1 waters are met.

(3) Streambank Stabilization and Flood Control Activities:

Riprap, revetments, jetties and other similar structures can be approved if the purpose of the project is to reduce existing environmental degradation, is necessary to protect human health and safety or to prevent substantial loss of private property and does not significantly and adversely affect beneficial uses.

(4) Roads, Utilities and Minor Recreational Activities:

Existing facilities may be maintained and new facilities constructed either as part of a public project or private development as long as the general requirements for construction on Class 1 waters are met.

- f. Individual 401 certifications are issued on all section 404 permits including the U.S. Army Corps of Engineers' nationwide and statewide general permits on Class 1 waters, and hydropower licences issued by the Federal Energy Regulatory Commission (FERC). A joint DEQ/Corps of Engineers public notice is issued by the Corps prior to the issuance of all individual 404 permits. There is no public notice prior to the authorization of any activity under a Section 404 nationwide or statewide general permit on Class 1 waters. The DEQ does not have a joint permitting agreement with FERC, therefore, DEQ shall conduct a separate public notice and comment period prior to issuing 401 certification for FERC licenses and permits on Class 1 waters.

B. Nonpoint Sources.

Nonpoint sources of pollution are not regulated by permits issued by the Department, but are controlled by the voluntary application of cost effective and reasonable best management practices. For Class 1 waters, best management practices will maintain existing quality and water uses.

IV. High Quality Waters - Classes 2AB, 2A, 2B and 2C

- A. The antidegradation procedure under this part applies to the issuance of NPDES Effluent Permits, Stormwater Permits (*Industrial & Construction Activities*) and Section 401 Certifications of Activities Regulated by the Federal Energy Regulatory Commission (FERC).

Waters classified as 2AB, 2A, 2B or 2C are known to support populations of fish and/or drinking water supplies and are considered to be high quality waters. The Water Quality Division may issue a permit or certification for new or increased discharges to these waters upon making a finding that the amount of resultant degradation is insignificant or that the discharge is necessary to accommodate important economic or social development in the area where the waters are located. The Department must also ensure that the highest statutory and regulatory requirements for all new and existing point sources and all cost effective and reasonable best management practices for nonpoint sources have been achieved. For purposes of antidegradation implementation these may be referred to as "reviewable waters".

Where there are existing regulated point or nonpoint sources located in the area, the Water Quality Division will ensure that compliance with the required controls has been or will be achieved prior to authorizing the proposed regulated activity. This requirement is primarily intended to ensure that proposed activities that will result in water quality degradation for a particular parameter will not be authorized where there are existing unresolved compliance problems involving the same parameter in the zone of influence of the proposed activity. The "zone of influence" is determined as appropriate for the parameter of concern, the characteristics of the receiving water (e.g. lake versus river, etc.), and other relevant factors. Where available, a Total Maximum Daily Load (TMDL) analysis or other watershed-scale plan will be the basis for identifying the appropriate zone of influence. The Division may conclude that such compliance has not been assured where existing sources are violating their NPDES permit requirements. However, the existence of schedules of compliance for purposes of NPDES permit requirements may be taken into consideration in such cases. In other words, required controls on existing regulated sources need not be finally achieved prior to authorizing a proposed activity provided there is reasonable assurance of future compliance.

The antidegradation review under this part consists of three sequential evaluations, 1. Determination of significance; 2. Economic evaluation; and 3. Examination of alternatives.

1. Determination of Significance:

- a. Based upon information submitted in an application for a water quality permit or certification, the Administrator shall make a determination of whether the proposed discharge will result in a significant lowering of water quality with respect to adopted numeric water quality criteria. The significance determination will be based on the chronic numeric standard and flow for the pollutant of concern except for those pollutants which have only acute numeric standards in which case the acute standard and flow will be used. This significance determination shall be made with respect to the net effect of the new or increased water quality impacts of the proposed activity, taking into account any environmental benefits resulting from the activity and any water quality-enhancing mitigation measures impacting the segment or segments under review, if such measures are incorporated with the proposed activity. The activity shall be considered not to result in significant degradation, if:
 - (1) The activity may be permitted under a general permit established by the state for discharges regulated under section 402 or by the Corps of Engineers for discharges regulated under Section 404 of the Clean Water Act; or
 - (2) The new or increased loading from the source under review is less than 10 percent of the existing total load to that segment for critical constituents (e.g. those for which there are stream standards set and which are present in the discharge); provided, that the cumulative impact of increased loadings from all sources does not exceed 10 percent of the baseline total load established for the segment (the baseline total load shall be determined at the time of the first proposed new or increased water quality impacts to the reviewable waters.); or
 - (3) The new or increased loading from the source under review will consume, after mixing, less than 20 percent of the available increment between low flow pollutant concentrations and the relevant standards (assimilative capacity), for critical constituents; or
 - (4) The activity will result in only temporary or short term changes in water quality.
- b. If an activity is considered not to result in significant degradation, no further review will be conducted. General NPDES permits and 401

certifications of general 404 permits will be issued at this point. In the case of individual permits, the Water Quality Division shall prepare a draft permit and provide opportunity for public comment before the NPDES permit is issued. Such public notices shall contain a statement describing the rationale for the determination of non-significance. If the permit is issued, the determination may be appealed to the Environmental Quality Council under the provisions of the Wyoming Administrative Procedures Act.

- c. If a determination is made that a proposed activity is likely to result in significant degradation of reviewable waters, an evaluation shall be made as to whether the degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

2. Economic Evaluation: The following provisions shall apply to this determination:

- a. The "area in which the waters are located" shall be determined from the facts on a case-by-case basis. The area shall include all areas directly impacted by the proposed activity.
- b. A determination shall be made on the facts on a case-by-case basis whether the proposed activity is important economic or social development. If the applicant submits evidence that the activity is important development, it shall be presumed important unless information to the contrary is submitted in the public review process. The determination shall take into account information received during the public comment period and shall give substantial weight to any applicable determinations by local governments or land use planning authorities.
- c. If the proposed activity is determined not to be important for economic or social development, authorization for the associated discharge(s) will be denied.
- d. If the proposed activity is determined to be important economic or social development, a determination shall be made whether the degradation that would result from such activity is necessary to accommodate that development.

3. Examination of Alternatives. The degradation shall be considered acceptable if there are no other water quality control alternatives available that:

- a. would result in no degradation or less degradation of the state waters; and
- b. are determined to be economically, environmentally, and technologically reasonable.

- c. This determination of whether such alternatives are available, shall be based upon a reasonable level of analysis by the project proponent, consistent with accepted engineering practice, and any information submitted by the public or which is otherwise available to the Administrator. The assessment shall at a minimum, address practical water quality control technologies, the feasibility and availability of which has been demonstrated under field conditions similar to those of the activity under review. The scope of alternatives considered shall be limited to those that would accomplish the proposed activity's purpose.
- d. In determining the economic reasonableness of water quality control alternatives, the Administrator may use some of the following factors to weigh the reasonableness of the various alternatives.
 - (1) Whether the costs of the alternative significantly exceed the costs of the proposal;
 - (2) For publicly owned treatment works (POTWs), whether user charges resulting from the alternative would significantly exceed user charges for similarly situated POTWs or public water supply projects;
 - (3) For any discharger into waters of the state, whether the treatment alternative represents costs that significantly exceed costs for other similar dischargers to similar stream classes, or standard industry practices.
 - (4) Any other environmental benefits, unrelated to water quality which may result from each of the alternatives examined.
- e. Upon conclusion of the alternatives analysis, the Administrator shall select a preferred alternative and prepare a draft permit and public notice proposing to authorize the selected alternative. The selected alternative shall be the least degrading, reasonable alternative consistent with the social and economic benefits. The public notice shall contain a statement describing the results of the antidegradation review. If the permit is issued, all administrative decisions relating to the antidegradation review or permit issuance may be appealed to the Environmental Quality Council under the provisions of the Wyoming Administrative Procedures Act.

B. Section 401 Certification Individual Section 404 Permits Issued by the U.S. Army Corps of Engineers.

Activities involving a discharge of dredged or fill materials that are considered to have more than minor adverse affects on the aquatic environment are regulated by individual Section 404 Permits. The decision making process relative to the 404

permitting program are contained in the 404(b)(1) guidelines (*40 CFR Part 230*). Prior to issuing a permit under the 404(b)(1) guidelines, the Corps of Engineers must: (1) make a determination that the proposed discharges are unavoidable (*i.e. necessary*); (2) examine alternatives to the proposed activity and authorize only the least damaging practicable alternative; and (3) require mitigation for all impacts associated with the activity. A 404(b)(1) findings document is produced as a result of this procedure and is the basis for the permit decision. Public participation is also provided for in this process.

Because the 404(b)(1) guidelines contain all of the required elements of an antidegradation review, the department will not conduct a separate review for the same activity. Section 401 certifications of individual 404 permits will rely upon the information contained in the 404(b)(1) findings document.

V. Use Protected Waters - Classes 3 (*all*), and 4 (*all*)

In general, Class 3 and 4 waters do not warrant the special protection provided on high quality waters and shall be afforded a basic level of antidegradation protection (EPA tier 1 equivalent). This level of protection is focused on maintaining existing uses and may allow lowering water quality so long as the established criteria for any parameter is not exceeded. The issuance of water quality permits and certifications shall not normally involve an examination of economic necessity or alternatives to the proposed activity, however, the administrator may determine on a case-by-case basis that special circumstances exist in relation to a proposed discharge and conduct a tier 2-type review prior to authorizing the activity. Special circumstances may include but are not limited to exceptional recreational or ecological significance (e.g. location in a park or urban greenway, presence of rare or sensitive plant and animal species, contains unique aquatic features such as wetland fens or geothermal springs etc.).

VI. Existing Use Protection for All Wyoming Surface Waters

Except for the special considerations provided in Chapter 1 of the Wyoming Water Quality Rules and regulations regarding Class 4C waters, existing in-stream water uses shall be maintained and protected in all Wyoming surface waters. For Class 1 waters, existing uses will be protected by implementing the requirements described in Section III of this implementation policy. For High Quality and Use Protected Waters, this implementation policy assumes that attainment of the criteria assigned to protect the current waterbody classification will serve to maintain and protect all existing uses. In some cases, however, water quality may have improved in the segment since the classifications were assigned, resulting in an existing use that is higher than the current classification. In other cases, the classifications may have been assigned based on inadequate information, resulting in classifications that do not fully encompass the existing uses of the segment. Where the antidegradation review results in the identification of an existing use that has protection requirements that are clearly defined, but are not addressed in the current classification and criteria, the Division will ensure that such existing uses are fully protected, based on implementation of appropriate numeric or narrative water quality criteria or criteria

guidance. For example, where a proposed activity will result in the discharge of a substance for which sufficient data to derive appropriate criteria are available (e.g. §304(a) criteria), but numeric criteria have not been adopted in the Chapter 1 regulations, the Division will develop effluent limitations that will protect the existing use. In cases where there is a proposed discharge where federally-listed threatened or endangered species are present (i.e. aquatic species), the Division will work with the U.S. Fish and Wildlife Service and EPA to gather available information and evaluate whether special existing use protection requirements are necessary to protect the listed species. Where there is a question regarding the appropriate classification of a segment, the applicant may be required to provide information regarding existing uses.

**MIXING ZONE AND
DILUTION ALLOWANCES
IMPLEMENTATION POLICY
(Chapter 1, Section 9)**

I. Purpose

Section 9 of Quality Standards for Wyoming Surface Waters (Water' Quality Division Rules and Regulations, Chapter 1) provides for the establishment of a zone of dilution in the vicinity of point source discharges where acute and chronic aquatic life criteria and human health criteria may be exceeded. Section 9 provides...

Except for acute whole effluent toxicity (WET) values and Sections 14, 15, 16, 17, 28 and 29 (b) of these regulations, compliance with water quality standards shall be determined after allowing reasonable time for mixing. Except for the zone of initial dilution, which is the initial 10% of the mixing zone, the mixing zone shall not contain pollutant concentrations that exceed the acute aquatic life values (see Appendix B). In addition, there shall be a zone of passage around the mixing zone which shall not contain pollutant concentrations that exceed the chronic aquatic life values (see Appendix B). Under no circumstance may a mixing zone be established which would allow human health criteria (see Appendix B) to be exceeded within 500 yards of a drinking water supply intake or result in acute lethality to aquatic life. The procedures used to implement this section are described in the "Mixing Zone and Dilution Allowances Policy."

This policy addresses how mixing and dilution of point source discharges in receiving waters will be addressed in developing chemical-specific and whole effluent toxicity discharge limitations for point sources. In all cases, mixing zone and dilution allowances shall be limited as necessary to protect the integrity and designated uses of the receiving water.

II. Concepts

A mixing zone is a limited area within the receiving waterbody where initial dilution of a point source discharge of pollution takes place. The establishment of a mixing zone is not appropriate in all circumstances. For example, in non-perennial or low flow streams, there may not be any dilution available to mix with the discharge. Also, there may be instances where background concentrations of specific pollutants in the receiving stream provide no assimilative capacity. In circumstances like these, acute and chronic criteria would have to be met in the discharge itself.

Where the establishment of a mixing zone is appropriate and possible, the design needs to be based on the following 3 concepts:

1. The size and configuration of the mixing zone shall not impair the integrity of the waterbody as a whole;
2. There shall be no lethality to aquatic organisms through the mixing zone.
3. There shall be no significant health risks to human populations associated with the mixing zone (*e.g. proximity to recreation areas or drinking water intakes*).

The size, configuration and other relevant design considerations shall be based on critical flow conditions for both the stream flow and the effluent flow. This policy addresses mixing zones and dilution allowances where (1) mixing is complete and near instantaneous at the point of discharge; and (2) mixing is incomplete at the point of discharge.

III. Complete Mixing - Dilution Allowances

- A. Where the discharge is to a river or stream, dilution is available at critical conditions, and available information is sufficient to conclude that there is near instantaneous and complete mixing of the discharge with the receiving water, an appropriate dilution allowance may be provided in calculating chemical-specific discharge limitations. An assumption of complete mixing may be based on any of the following:
 1. The mean daily flow of the discharge exceeds the critical in-stream flow;
 2. The presence of an effluent diffuser that covers the entire stream width at critical flow;
 3. A demonstration by the permittee, based on in-stream studies that shows no more than a 10% difference in bank to bank concentrations within a longitudinal distance not greater than 2 stream/river widths; or
 4. Other defensible discharge outlet designs and configurations provided by the permittee.
- B. The basis for concluding that complete mixing occurs will be documented in the rationale for the discharge permit.
- C. The dilution allowance for continuous discharges shall be based on the critical low flow of the receiving stream. Critical low flow can be determined using the methods provided in Chapter 1, Section 11.
- D. For controlled discharges, such as lagoon facilities that discharge only during high ambient flows, the stream flow to be used in determining a dilution allowance shall be the lowest flow expected to occur during the period of discharge.
- E. Where a discharger has installed a diffuser in the receiving stream, that portion of the stream flow affected by the diffuser may be used to calculate a dilution allowance.

For example, 50% of the 7Q10 low flow may be used for a diffuser extending halfway across the stream bottom.

IV. Incomplete Mixing - Mixing Zones and Dilution Allowances

- A. Where dilution is available at critical conditions and the discharge does not mix at a near instantaneous and complete rate, an appropriate mixing zone may be designated for purposes of implementing aquatic life and human health criteria in the receiving stream. Where a mixing zone is allowed, its size and shape will be determined on a case-by-case basis as follows:
 - 1. mixing zones for streams and rivers shall not exceed one-half of the cross-sectional area or a length 10 times the stream width at critical low flow, whichever is more limiting;
 - 2. mixing zones in lakes shall not exceed 5% of the lake surface area or 200 feet in radius, whichever is more limiting.
- B. The above limits are intended to establish the maximum allowable size of mixing zones, however, individual mixing zones may be further limited or denied in consideration of designated and existing uses or presence of the following concerns in the area affected by the discharge:
 - 1. bioaccumulation in fish tissues or wildlife;
 - 2. biologically important areas such as fish spawning or nursery areas;
 - 3. low acute to chronic ratio;
 - 4. potential human exposure to pollutants resulting from drinking water or recreational activities;
 - 5. attraction of aquatic life to the effluent plume;
 - 6. toxicity/persistence of the substance discharged;
 - 7. zone of passage for migrating fish or other species, including access to tributaries; and
 - 8. cumulative effects of multiple discharges and mixing zones.
- C. Within the mixing zone designated for a particular substance, the numeric water quality criteria contained in Chapter 1, Appendix B of the Water Quality Rules and Regulations may not apply. However, all mixing zones shall be free from materials that:

1. settle to form objectional deposits; (*Sections 14 & 15*);
 2. float as debris, scum, oil, or other matter; (*Section 16*);
 3. produce objectionable color, odor, or taste; (*Section 17*);
 4. are acutely lethal; (*Section 9*); and
 5. produce undesirable aquatic life (*Section 28*)
- D. In incomplete mix situations, permit limitations to implement acute whole effluent toxicity (WET) criteria shall be based on meeting such criteria at the end-of-pipe (i.e. without an allowance for dilution). For chemical-specific acute aquatic life criteria, discharge limitations will be based upon meeting such criteria at the edge of the zone of initial dilution (*Section 9*).
- E. The dilution allowance for continuous discharges shall be based on the critical low flow of the receiving stream. Critical low flow can be determined using the methods provided in Chapter 1, Section 11.
- F. For controlled discharges, such as lagoon facilities that discharge only during high ambient flows, the stream flow to be used in determining a dilution allowance shall be the lowest flow expected to occur during the period of discharge.
- G. The requirements and concerns identified in paragraphs B. and C. above may be considered in deciding the portion, if any, of the critical low flow to provide as dilution. The environmental concerns listed in paragraph B. are not intended to establish any bright line tests in which to make risk determinations. Rather, such decisions should be made in consideration of designated and existing uses and relevant site-specific conditions. Each of the concerns are further explained as follows:
1. Bioaccumulation in fish tissues or wildlife: Both potential and existing bioaccumulation concerns should be evaluated. As a general guideline, pollutants with bioconcentration factors (BCF) greater than 300 indicates a potential risk of downstream bioaccumulation;
 2. Biologically important areas such as fish spawning or nursery areas: Information on either the existence of spawning areas within the proposed zone of influence or a "shore hugging" effluent plume in an aquatic life segment could support a conclusion that allowing dilution or a mixing zone would pose significant risk to a biologically important area. Presence of a threatened or endangered species downstream should also be considered in light of the duration and magnitude of potential exposure of the particular species.;

3. Low acute to chronic ratio: For substances with low acute to chronic ratios, indicating that acute effects may occur at concentrations "close" to those that have been demonstrated to result in chronic effects, restricting or denying a mixing zone or dilution allowance may be appropriate in order to avoid acutely toxic concentrations outside of the zone of initial dilution;
 4. Potential human exposure to pollutants resulting from drinking water or recreational activities: Existence of a drinking water intake or a recreational area within or near the proposed zone of influence would strongly suggest that an allowance for dilution is not appropriate for substances with established human health criteria;
 5. Attraction of aquatic life to the effluent plume: Where available data support a conclusion that fish or other aquatic life are attracted to the effluent plume, it may be appropriate to set discharge limitations at the end-of-pipe;
 6. Toxicity/persistence of the substance discharged: It may be appropriate to deny dilution or a mixing zone for particularly toxic or persistent substances. This factor should be given added weight where the discharge is to an isolated aquatic system where the substance is expected to remain biologically available;
 7. Zone of passage for migrating fish or other species, including access to tributaries: Where available data suggest that allowing dilution or a mixing zone would inhibit migration of fish or other species, it may be appropriate to set discharge limitations at the end-of-pipe. This factor includes consideration of whether the effluent plume will block migration into tributary segments;
 8. Cumulative effects of multiple discharges and mixing zones: In some cases, existence of overlapping effluent plumes may necessitate denying dilution or mixing zones for discharging facilities. Any allowances for dilution should be restricted as necessary to protect the integrity of the receiving water ecosystem and designated water uses.
- H. The mixing zone size limits shall be implemented by calculating allowable dilution consistent with one of the following methods:
1. Default Method: In general, the default method provides a conservative level of allowable dilution and can be used where available data on potential environmental impacts suggests that a full mixing zone should not be allowed, or available data on the receiving stream or downstream uses is insufficient to determine the appropriate mixing zone dimensions.
 - a. Stream/River Discharges: As a general guideline, dilution calculations which use up 10% of the critical low flow may be used for developing effluent limitations for chronic aquatic life criteria and human health

criteria. For acute numeric aquatic life criteria, 1% of the critical low flow may be used.

- b. Lake/Reservoir Discharges: As a general guideline, dilution up to 4:1 (20% effluent) may be provided for developing effluent limitations for chronic aquatic life criteria and human health criteria. For acute numeric aquatic life criteria, a 0.4:1 dilution ratio may be used.

- 2. Modeling Method: Mixing zones should not exceed one-half the cross-sectional area of the receiving stream or a length 10 times the stream width, whichever is less. These restrictions apply to the stream at critical low flow.

A calculation must first be performed to determine if the discharge mixes within one-half area before or after the length limit. This calculation as well as other mixing zone calculations can be performed using any number of appropriate models including but not limited to STREAMIX I, CORMIX, PLUMES etc.

- 3. Field Study Method: Field studies which document the actual field characteristics in the receiving water can be used to determine the dilution allowance at critical low flows.

I. Other Considerations.

- 1. Where dilution flow is not available at critical flow conditions, neither a mixing zone or an allowance for dilution will be provided.
- 2. All mixing zone and dilution assumptions are subject to review and revision as information on the nature and impacts of the discharge becomes available. Mixing zone and dilution decisions are subject to review and revision along with all other aspects of the discharge permit upon expiration of the permit.
- 3. For certain pollutants (e.g. ammonia, dissolved oxygen, metals) that may exhibit increased toxicity after dilution and complete mixing within the receiving water, the wasteload allocation shall address such toxicity as necessary to fully protect designated and existing uses.

TURBIDITY IMPLEMENTATION POLICY

(Chapter 1, Section 23)

I. Purpose

Section 23 of Quality Standards for Wyoming Surface Waters (Water Quality Division Rules and Regulations, Chapter 1) places the following limits on increases of turbidity in waters of the state:

*Section 23. **Turbidity.***

(a) In all cold water fisheries and drinking water supplies (classes 1, 2AB, 2A, and 2B), the discharge of substances attributable to or influenced by the activities of man shall not be present in quantities which would result in a turbidity increase of more than ten (10) nephelometric turbidity units (NTUs).

(b) In all warm water or nongame fisheries (classes 1, 2AB, 2B and 2C), the discharge of substances attributable to or influenced by the activities of man shall not be present in quantities which would result in a turbidity increase of more than 15 NTUs.

(c) An exception to paragraphs (a) and (b) of this section shall apply to:

(i) The North Platte River from Guernsey Dam to the Nebraska line during the annual "silt run" from Guernsey Dam; and

(ii) Short-term increases of turbidity that have been determined by the administrator to have only a minimal effect on water uses. Such determinations shall be made on a case-by-case basis and shall be subject to whatever controls, monitoring, and best management practices are necessary to fully maintain and protect all water uses. The procedures used to implement this section are described in the "Turbidity Implementation Policy."

When the department is considering the regulation of any point source (through the NPDES or 401 certification processes), compliance with the numeric turbidity criteria for the various classes of waters has always been required and will continue to be required. It is also recognized that short-term, construction-related exceedences of these standards are often unavoidable and do not necessarily result in any significant degradation of water quality or loss of beneficial uses. In fact, there are many construction activities in streams and rivers which have long-term beneficial effects or provide important economic or social benefits but temporarily increase turbidity during the actual construction period. Though the department recognizes that these circumstances exist, there has not been a formal process for allowing temporary elevated levels of turbidity on projects which are otherwise in the public interest.

The 1999 revision of the surface water quality standards included a provision to allow temporary, elevated levels of turbidity in certain limited circumstances. The purpose of this document is to provide a process and procedure that the department will follow to implement Section 23 (c)(2) of the Chapter 1 Surface Water Standards.

II. Policy

In accordance with Section 23(c)(2), the administrator of the Water Quality Division may authorize temporary increases in turbidity above the numeric criteria in Section 23 (a) and (b) of the Chapter 1 Surface Water Quality Standards in response to an individual application for a specific activity. It is intended that temporary increases in turbidity will be limited to construction-related activities rather than effluent or stormwater discharges. Such authorization may be issued independently or included in an NPDES permit or 401 water quality certification provided that the applicant can demonstrate and accept the following conditions:

- A. The activities causing the increased turbidity will be limited in time and duration;
- B. All existing water uses will be fully maintained and protected throughout the duration of the activity;
- C. Best available technology and/or best management practices will be employed to maintain turbidity and sedimentation at the lowest practical level;
- D. The authorization for increased turbidity will specify the limits of the authorization and may include a monitoring and reporting schedule to demonstrate compliance with those limits;
- E. Mitigation or stream restoration requirements may be included as conditions in conjunction with any authorization for a temporary increase in turbidity;
- F. An authorization issued under this section does not relieve the applicant of any liability for damages to aquatic life, habitat or other beneficial uses that may result from an increase in turbidity;
- G. An authorization issued under this section does not exempt the applicant from any other federal, state or local laws or regulations, nor does it provide exemption from legal action by private citizens for damage to property that the activity may cause.
- H. The administrator shall publish a notice of intent to authorize an increase of turbidity in a paper of local circulation prior to authorizing the increase. Interested persons may request a public hearing on the proposed authorization.

**USE ATTAINABILITY ANALYSIS (UAA)
IMPLEMENTATION POLICY
(Chapter 1, Sections 33 and 34)**

I. Purpose

The purpose of this document is to describe the process and provide guidance relative to the development of Use Attainability Analyses where they are required under various sections of the Chapter 1 surface water quality standards. A Use Attainability Analysis is defined in the regulations as:

Section 2 (xlix)

"Use attainability analysis (UAA)" means a structured scientific assessment of the factors affecting the attainment of the use . The factors may include physical, chemical, biological, and economic factors as described in Section 33 of these regulations.

A Use Attainability Analysis is generally required prior to changing a water classification or designated use, or establishing site-specific criteria that is different than the adopted statewide criteria for any pollutant.

II. Concepts

Chapter 1 of the Wyoming Water Quality Rules and Regulations - Surface Water Quality Standards establishes use designations on all waters of the state and the criteria necessary to achieve and maintain those uses. Use designations are the goals set for each water and criteria are elements of the standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use. When criteria are met, water quality will generally protect the designated use. The use designations and criteria adopted in the state standards are intended to comply with the requirements of the federal Clean Water Act and related federal regulations.

At a minimum, uses must be designated in a manner which serves the purposes of the federal Clean Water Act as defined in Sections 101(a)(2), and 303 (c) of that Act. These sections provide that water quality standards should:

- provide wherever attainable, water quality for the protection and propagation of fish, shellfish and wildlife and recreation in and on the water (*fishable/swimmable uses, § 101(a)(2)*); and
- consider the use and value of state waters for public water supplies, propagation of fish and wildlife, recreation, agriculture and industrial purposes, and navigation (§ 303(c)).

Every use is not protected on every water, however, the Clean Water Act requires that each water be designated for those uses actually supported on the water as of November 28,

1975 (*existing uses*) or would be achieved when the effluent limits under CWA. Sections 301 (b) and 306 are imposed on point source discharges and when cost-effective and reasonable best management practices are applied to nonpoint source discharges (*attainable uses*). Furthermore, the federal regulations at 40 CFR Part 131 require that all waters be protected for the fishable/swimmable uses contained in § 101 (a)(2) of the Clean Water Act unless it is specifically demonstrated that those uses are not attainable.

The uses that are protected on Wyoming waters are listed and described in Section 3 of the Surface Water Quality Standards and include Agriculture, Fisheries, Aquatic Life other than Fish, Industry, Drinking Water, Fish Consumption, Recreation, Scenic Value and Wildlife. There are also numerous classifications for surface waters of the state. Except for Class 1, waters are classified according to their designated uses. Class 1 waters are specially designated waters on which the existing water quality is protected regardless of the uses supported by the water. The table that follows shows the uses designated on each of the use-based water classifications.

Class	Drinking water	Game Fish	Non-Game Fish	Fish Consumption	Other Aquatic Life	Recreation	Wildlife	Agriculture	Industry	Scenic Value
2AB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2A	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
2B	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2C	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3A	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
3B	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
3C	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
4A	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
4B	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
4C	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes

Use Attainability Analyses are required under the following circumstances:

- A. Use Attainability Analyses are required prior to designating any water as Class 4 since these waters are not protected for all the uses specified in Section 101 (a)(2) of the federal Clean Water Act.

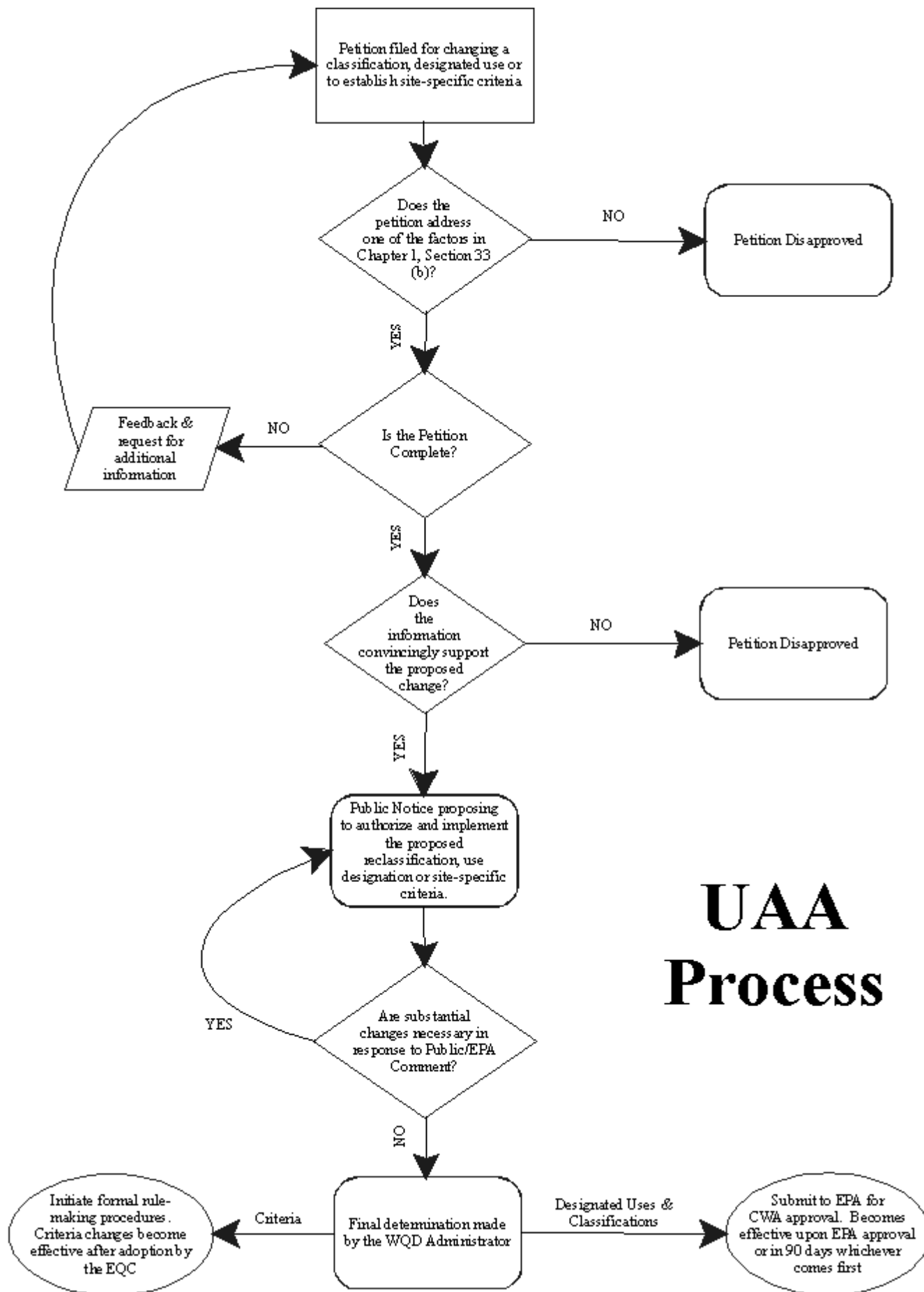
- B. A Use Attainability Analysis is required prior to reclassifying any water to a new classification involving the addition, removal or modification of a use designation. Most classification changes generally result in a corresponding change in use designations but not necessarily. For example, a reclassification from 2B to 2A would involve the removal of the fisheries use and, therefore, require a UAA. Changes completely within the Class 3 or Class 4 subcategories, however, do not always involve a change in use protection and may not require UAAs. For example, a change in classification from Class 3A to 3B does not involve a change in use designations, applicable criteria or antidegradation protections. It is instead simply a correction based on information that the water is not an isolated water and is part of a surface tributary system.
- C. A Use Attainability Analysis is required prior to modifying use designations even when the action does not result in a change in classification. For example, the removal of an agricultural or wildlife or recreation use from any water would not involve a classification change but does need to be based on a UAA.
- D. A Use Attainability Analysis is required prior to establishing a site-specific criterion or water body condition that is different than the established statewide standards associated with the water's classification. For example, background concentrations of particular pollutants may exceed the established aquatic life criteria, however, aquatic life may still exist in the water. In these circumstances it would not be appropriate to remove all aquatic life protections but may be sensible to adjust the criteria to be at or near the background conditions. Because criteria are generally established under laboratory conditions, these situations may be found to occur for any designated use in natural settings.

Use attainability analyses are not required when assigning or removing a Class 1 designation.

III. Process

Each Use Attainability Analysis involves a site-specific evaluation with varying information requirements. Depending upon individual circumstances and public interest issues, one may involve an exhaustive study while another may only require simple and cursory information. For example, Class 4A applies to man-made canals and ditches yet a UAA is required prior to classification because these waters are not protected for aquatic life uses. All that may be required in this instance is a demonstration that a waterway is an artificially constructed conveyance for an agricultural or industrial use and would normally involve only a minimal amount of information. On the other hand, a use may be removed because natural levels of pollution or human caused pollution that cannot be remedied prevent the attainment of the use. In either of those cases, making a showing that pollutant levels are indeed natural or cannot be remedied may involve a detailed assessment and evaluation of watershed conditions and economic analysis. In all circumstances the following general administrative procedures will apply:

- A. A petition is made for a change in classification, designated use, or criteria. This petition may be made by any person or entity or may originate with DEQ/WQD based on information available to the administrator. The petition must address one or more of the factors listed in Chapter 1, Section 33 (b), (i) through (vi) if the proposal would result in a removal of a designated use or the establishment of less stringent criteria.
- B. The WQD reviews the petition for completeness and provides feedback to the petitioner on the status of the petition and may make requests for additional information or studies if necessary.
- C. Once a petition has been accepted as complete, the WQD evaluates the petition and approves or disapproves the proposed change in use designation, classification or site-specific criteria. In instances where a petition is disapproved, the decision may be appealed to the Wyoming Environmental Quality Council pursuant to the provisions of the Wyoming Administrative Procedures Act (WS 16-3-101 through 16-3-115).
- D. In instances where a petition for a revised classification or use is approved, the administrator shall prepare a public notice proposing to authorize and implement the proposed change. The public notice shall contain the rationale supporting the decision and will also be submitted to EPA for a 30-day review period requesting comment and recommendations. WQD may modify its initial approval determination based on public comments and EPA recommendations and issue a final administrative decision relative to the petition..
- E. If the final administrative decision is substantially changed from that which was proposed, the administrator shall prepare a second 30-day public notice. Otherwise, the administrative decision shall be considered final and submitted to EPA for approval as a revised standard for Clean Water Act purposes as provided in Chapter 1, Section 34. This decision may be appealed to the Wyoming Environmental Quality Council pursuant to the provisions of the Wyoming Administrative Procedures Act (WS 16-3-101 through 16-3-115).
- F. In instances where a petition for revised water quality criteria is approved, the Department shall initiate formal rule making procedures to amend the appropriate section(s) of the Chapter 1 Water Quality Rules and Regulations. Changes in criteria shall not become effective until adopted by the Environmental Quality Council and filed with the Secretary of State.



IV. Petitions

Except for Class 1 designations, all petitions for water reclassifications must be made in accordance with the provisions of Section 33 of the Chapter 1 Surface Water Standards.

- A. Lowering Protections. Those petitions that involve lowering a classification, removing a use designation or establishing site-specific criteria that are less stringent than the adopted statewide standards must contain a Use Attainability Analysis (UAA) addressing one or more of the factors listed in Section 33 (b), paragraphs (i) through (vi) which states:

(Section 33. Reclassifications)...

- (b) *The Water Quality Administrator may lower a classification, remove a designated use which is not an existing use or an attainable use, or make a recommendation to the Environmental Quality Council to establish sub-categories of a use, or establish site-specific criteria if it can be demonstrated through a Use Attainability Analysis (UAA) that the original classification and/or designated use or water quality criteria are not feasible because:*
- (i) *Naturally occurring pollutant concentrations prevent the attainment of the classification or use; or*
 - (ii) *Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating state water conservation requirements to enable uses to be met; or*
 - (iii) *Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or*
 - (iv) *Dams, diversions, or other types of hydrologic modifications preclude the attainment of the classification or use, and it is not feasible to restore the water body to its original condition or to operate such modification in such a way that would result in the attainment of the classification or use; or*
 - (v) *Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of the classification or use; or*
 - (vi) *Controls more stringent than those required by Sections 301(b) and 306 of the Federal Act would result in substantial and widespread economic and social impact. This subsection shall not apply to the derivation of site-specific criteria.*

- B. Increasing Protections. Those petitions that involve adding a use designation or establishing site-specific criteria that are more stringent than the established standards are not subject to the Section 33 (b) factors listed above. Instead, the UAA must demonstrate that the proposed new designated uses are either existing uses or may be attained with the imposition of more stringent controls or management practices. In order to establish more stringent site-specific criteria, a petition should demonstrate that the approved statewide criteria are not sufficiently protective of the currently designated uses.

V. Completeness

Prior to evaluating a petition on its merits, the WQD must conclude that a petition is complete and contains the necessary water quality data and other information to make a valid determination. As mentioned in Section III. above, the degree of information necessary will depend upon the nature of the petition and the associated Section 33 (b) factor. At a minimum, all petitions should contain the following general information to be considered complete.

A. Petition Contents - General Requirements

1. A narrative explaining the nature and purpose of the petition. As mentioned in Section IV above, if the proposal would result in the lowering of protections the narrative must address one of the factors listed in Chapter 1, Section 33 (b). It should explain the reasons for the requested use removal, classification change, or site-specific criteria including any adverse effects that would occur if the petition is denied. Adverse effects could include any harm to business operations, commerce, private property rights, development opportunities, the environment, or any other public or private interest. Adverse effects should be tangible rather than speculative. For example, an unattainable water quality criterion that obstructs a proposed private or public action or causes unnecessary delay or expense is a tangible adverse effect. Speculative adverse effects would be associated with activities that are neither proposed nor have a reasonable potential to be proposed in the foreseeable future.

This step is necessary to help prioritize the department's actions and resources. The approach taken in the water quality standards is to designate aquatic life and recreation uses on all waters by default. These uses would be removed as appropriate upon the completion of the required use attainability analyses. Though it is not necessary to have a "tangible adverse effect" in order to make an appropriate designation, those with tangible effects need to be addressed with more urgency.

2. The name and general description of the subject water body(s). This may be a single stream segment or a collection of stream segments making up a watershed or sub-watershed, lake, pond, or other still water body, or isolated water.
3. The specific location of the subject water body(s). Legal descriptions should be provided for the beginning and end of stream segments. Stream segments may also be described from tributary confluence to tributary confluence. Generally, WQD will not approve criteria or use designation changes on small segments of main stem streams.

4. Maps of the subject water body containing the necessary features and adequate detail to support the proposal. For example, if the intent of the petition is to show that normal stream flows are not sufficient to support aquatic life, National Wetlands Inventory, 7.5 minute quad maps depicting wetland occurrences along the entire waterbody should be used. However, if the intent of the petition is to remove a fisheries use, a more general map depicting the stream reach and its tributaries may be adequate. The maps should also indicate sample locations, photo points and any other features that are germane to the petition.
5. Photographs that adequately characterize the water body for the purposes of the petition. These should be taken at points along the water body where there are changes in flow volumes or pattern, springs, wetlands, tributaries, diversions etc. in a sufficient number to clearly illustrate the resource. Each photo point should also be indicated on the maps submitted under (4) above. Each photograph should be accompanied by information including a photo ID number, name of photographer, date and time taken, location and direction from which the photo was taken and a narrative describing what the photo is intended to depict.

B. Petition Contents - Specific Requirements

In addition to the General Requirements, each UAA must contain information and or data that is specific to the petition being made and to the associated Section 33 (b) factor where relevant. The required detail and quality of this information will vary case-by-case and it is not the purpose of this section to provide guidance on every possible situation. The basic requirement is that the UAA contains defensible information that convincingly supports the purposes of the petition.

Except when increasing protections, a Use Attainability Analysis must make a demonstration that a certain condition exists and that the reason it exists is due to one of the factors in Chapter 1, Section 33 (b). Most commonly, UAAs will be developed to support a petition to lower a water classification involving the removal of a use designation. The list that follows shows examples of classification changes involving the removal of a use and the general demonstration that must be made. It is not meant to be exhaustive since there may be other situations, but these are the most common.

Classification changes:

2AB to 2A: Demonstration that the source water for an existing drinking water supply does not and cannot support fish for one or more of the reasons provided in Chapter 1, Section 33(b).

2AB to 2B: Demonstration that a known game fishery or perennial water that is tributary to a known game fishery cannot reasonably support a drinking water supply for one or more of the reasons provided in Chapter 1, Section 33(b).

2AB to 2C: Demonstration that the water is known to support only non-game fish species or is a perennial tributary to a water known only to support non-game species; and cannot reasonably support a drinking water supply for one or more of the reasons provided in Chapter 1, Section 33(b).

2B to 2C: Demonstration that the overwhelming composition of fish species is non-game for one or more of the reasons provided in Chapter 1, Section 33(b). Incidental or occasional use of the water by game species does not require the 2B classification.

Class 2 (all) to Class 3A or Class 3B: Demonstration that the water is either isolated or is an intermittent or ephemeral tributary; and is not capable of supporting fish for one or more of the reasons provided in Chapter 1, Section 33(b).

Class 2 (all) to Class 3C: Demonstration that the water is a perennial tributary stream that cannot support fish or drinking water supplies for one or more of the reasons provided in Chapter 1, Section 33(b).

All Class 4 designations:

- 4A: Demonstration that the water body is an artificially constructed conveyance for an agricultural or industrial water supply.
- 4B: Demonstration that the water is not capable of supporting aquatic life because natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use (*Chapter 1, Section 33 (b)(ii)*).
- 4C: Demonstration that 100% of the flow or standing water is attributable to permitted effluent discharges except for occasional snow melt and storm events (*Chapter 1, Section 33 (b)(iii)*).

A Use Attainability Analysis is also required prior to establishing site-specific criteria that are less stringent than the adopted statewide criteria for any particular use designation or classification without removing the use or changing the classification. Demonstrations relative to this action must show that the adopted criteria cannot be attained for one or more of the reasons provided in Chapter 1, Section 33 (b). Additionally, each specific criterion must be evaluated separately.

Use Attainability Analyses intended to add a designated use must contain sufficient information to conclude that a use is an existing use or otherwise attainable by the imposition of more stringent controls on pollutant sources.

In order to establish more stringent site-specific criteria, the UAA must demonstrate that the approved statewide criteria are not sufficiently protective of the currently designated uses.

Section 33 (b) Factors

Chapter 1, Section 33 (b), paragraphs (i) through (vi) provide the allowable rationale for removing a use designation or establishing less stringent water quality criteria on a site-specific basis. Except when related to a Class 4A designation, all UAAs must address one or more of these factors. A 4A classification is based solely on the fact that the waterbody is an artificial canal or ditch that is not known to support fish populations and it is not necessary to establish the 33(b) factor beyond that finding. Each factor is discussed below and guidance provided as to the current thinking of DEQ on what type of information is needed to justify a determination.

Naturally occurring pollutant concentrations prevent the attainment of the classification or use;

The UAA must establish that ambient water quality exceeds the adopted criteria and that the source of the pollution is not attributable to human activities. The natural source of pollution or natural condition that prevents the attainment of the designated use needs to be identified and quantified. Human activities in the area such as land uses, developments, discharges etc. need to be examined and reasonably eliminated as a cause of non-attainment.

A designated use may be removed on the basis of a single pollutant constituent or condition. For example, naturally occurring levels of copper in the water may prevent the attainment of a fisheries use and when demonstrated, may be sufficient cause to remove that use. A UAA would not necessarily have to evaluate all other potential constituents that might also contribute to the non-attainment. Information on other constituents, however, would help to support a final determination.

The establishment of this factor needs to be supported by sufficient data to characterize pollutant concentrations and water body conditions on a year-round basis. Consideration must be given to seasonal variations in flow, temperature, climate, land uses, non point sources of pollution and any other pertinent factor.

Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met;

The establishment of this factor needs to be supported by sufficient data to characterize actual flow conditions on a year-round basis. Consideration must be given to seasonal variations in flow, climate and consumptive water use.

In general, this factor applies to the removal of drinking water, fisheries, or aquatic life uses. In relation to fisheries, it may serve as the basis for establishing seasonal criteria on waters that support fish only part of the year or for removing the fishery designation on intermittent and ephemeral waters that have been "misclassified" in relation to the provisions of Chapter 1, Section 4 (b). In relation to drinking water, the UAA needs to demonstrate that water availability is not sufficient to support community or non-community drinking water supplies as defined under the federal Safe Drinking Water Act.

Most commonly, this is the factor relied on to classify waters as 4B. As provided in Chapter 1, Section 4, the occurrence of wetlands in or adjacent to stream channels will be used as an indicator of whether or not normal flow conditions are sufficient to support aquatic life. In general, areas that are inundated or saturated to the surface for as little as 7 days during the growing season will develop wetland characteristics. Stream channels that lack a significant wetland component may be considered to have insufficient hydrology to support aquatic life.

In order to establish this factor, the UAA should address entire stream reaches, not just isolated segments. The objective is to show that wetlands are either non-existent or occur so infrequently

that the hydrologic potential of the stream to support aquatic life is insignificant. Significance is not precisely defined and will be determined on a case-by-case basis after consideration of the ratio of wetland acres to stream length in addition to wetland functions and values.

National Wetland Inventory (NWI) maps produced by the U.S. Fish and Wildlife Service may be used to identify wetland occurrences and to calculate acreages. Wetlands are defined in Wyoming statute as areas having all 3 essential characteristics including hydrophytic vegetation, hydric soils and wetland hydrology. The NWI maps depict and classify both wetlands and deep water habitats and all of the features shown on the maps do not necessarily delineate as wetlands under the Wyoming definition or the delineation methods used by the U.S. Army Corps of Engineers for Clean Water Act purposes. When identifying wetlands using the NWI maps, unvegetated systems need to be separated from the vegetated ones since unvegetated systems are not wetlands. Unvegetated sub-classes may be found in both the lacustrine and riverine systems classified on the NWI maps. All sub-classes of the palustrine system should be considered wetlands. Interpretation of the Cowardin classification system, photographs and/or on site-delineations may all be used to differentiate between riverine and lacustrine subclasses that are wetlands and those that are not.

After the amount of wetlands has been identified, the significance of that amount needs to be determined. If no wetlands have been identified, the UAA may conclude that aquatic life uses are not attainable. In all other cases, the UAA must present the rationale for determining that the amount of wetlands that are present are of such minor consequence that the stream system as a whole cannot be considered to sustain aquatic life.

When using wetland occurrence to establish this factor, it must be remembered that wetlands are used as a surrogate measurement to determine actual hydrologic conditions over an extended period of time. Its best use is to separate truly dry stream channels from those that are not without having to directly measure flows through all seasons of the year. The extent of wetland occurrence cannot be used to remove aquatic life protections from waterbodies that are known to normally contain water for extended periods even though they do not exhibit a significant amount of wetlands. Examples of these waterbodies would be bedrock stream channels and steep-sided rivers, lakes and ponds that have the hydrology to support aquatic life but not the substrate necessary for wetlands to establish.

Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place;

This factor is relevant when non-attainment of a designated use is known to be caused by human activities or simply when the cause of non-attainment cannot be shown to be natural in origin. It contains two tests, either of which can be used to justify the removal of a designated use.

The first test is to show that a use is not existing and the reason(s) for its non-attainment cannot be remedied. An analysis of economic and technological factors must be conducted in order to make a determination under this factor. Other legal, social and cultural factors can also be considered and used as supporting information. The level of analysis and information required may vary from one situation to another depending upon the nature and severity of the source pollution and the overall environmental benefit of restoring the use.

The second test is to show that the available remedy would cause more environmental harm than to leave the pollution source in place. Most commonly, this is the factor relied on to classify waters as 4C. Class 4C waters are comprised of essentially 100% effluent discharges. Without the discharge, the stream would not support aquatic life and would be classified 4B. Since the effluent is the only available water, it is roughly analogous to a natural background condition. It can be assumed that any aquatic life that colonizes the water is tolerant to the chemical and physical conditions that prevail even if they exceed the adopted aquatic life criteria for particular constituents. Requiring full aquatic life protections in these circumstances would often result in a loss of the discharge and of the aquatic community it supports. Non-aquatic wildlife and livestock are often the greatest beneficiary of these types of systems in the arid areas of Wyoming and these uses would also be lost. Unless there is convincing evidence to the contrary, it will be assumed that removing discharges in effluent dominated situations does result in greater environmental harm than leaving the discharge in place without requiring full aquatic life protection.

The information necessary to establish this factor for the purpose of classifying a stream 4C should consist of sufficient data to show that except for occasional snowmelt and precipitation runoff, 100% of the available water consists of a permitted effluent discharge.

Dams, diversions, or other types of hydrologic modifications preclude the attainment of the classification or use, and it is not feasible to restore the water body to its original condition or to operate such modification in such a way that would result in the attainment of the classification or use;

This factor applies to dams, diversions, or other hydrologic modifications that were constructed prior to November 28, 1975 and resulted in the loss of a fisheries, aquatic life or recreational use in the waters on which they were constructed. Uses that existed on the waters after that date would be considered "existing uses" and would still have to be designated. It is not necessary to protect waters for the applicable uses that were lost if it can be shown that restoration is not feasible. The information required to establish this factor is similar to what is required for human caused sources of pollution that cannot be remedied. An analysis of economic and technological factors must be conducted in order to make a determination. Other legal, social and cultural factors can also be considered and used as supporting information. The level of analysis and information required may vary from one situation to another depending upon the nature of the hydrologic modification and the overall environmental benefit of restoring the use.

Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of the classification or use;

This factor applies only to the removal of fisheries or aquatic life uses since these are normally the only uses where the expressed physical habitat parameters are relevant. The critical point that must be established by the information in the UAA is that the lack of habitat is a natural condition and not caused by hydrologic modifications, land uses, or other human activities. In this respect the requirements are similar to those used to establish that naturally occurring pollution prevents the attainment of the use. The basic difference is that one refers primarily to chemical parameters and the other to physical parameters.

Controls more stringent than those required by Sections 301(b) and 306 of the federal Act would result in substantial and widespread economic and social impact.

This is probably the most difficult factor to establish and has the most limited application. The referenced controls required by Sections 301 and 306 of the Clean Water Act are industry-specific effluent limitations and treatment technologies. They establish basic levels of required water quality treatment that is more related to best available technology than to water quality and water uses. This factor is intended to be applied in circumstances where it is known that the application of the technology-based requirements will not achieve the water quality standards applicable to the receiving water and additional requirements to meet the water quality standards will result in unacceptable social or economic impacts.

The essence of a determination under this factor is that the activity causing the impact is of such great economic or social importance that it supercedes the goal of maintaining the water use. The UAA must establish that the imposition of the water quality standards would result in "widespread" social and economic impacts. This is an extremely subjective term and can only be defined on a case-by-case basis after full public participation. An economic impact analysis must be completed including an examination of alternatives that would lessen or mitigate both economic and environmental impacts. The level of analysis and information required must be comprehensive since the object is to quantify "widespread" economic or social impact in relation to the value of the water use that would be removed.

VI. Implementation

A. Classifications and Use Designations

Upon a final approval by the Administrator for changes in classifications or use designations, the results of a Use Attainability Analysis will be submitted to EPA for approval as a revised water quality standard for CWA purposes. The revised standard will become effective upon EPA approval or 90 days after submittal, whichever comes first. The final determination by the Administrator is an action that may be appealed to the Environmental Quality Council pursuant to Chapter 1, Section 16 of the Rules of Practice and Procedure.

B. Criteria

Site-specific changes in water quality criteria cannot be implemented administratively by the Water Quality Division. After approval by the Administrator of a Use Attainability Analysis which would result in the establishment of site-specific criteria for any pollutant, the DEQ shall recommend such revised criteria to the Wyoming Environmental Quality Council for adoption pursuant to formal rule-making procedures. The revised criteria shall not become effective until adopted by the Council and filed with the Secretary of State as revised rules.